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UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Agricultural Economics

THE PROSPECTIVE COTTON HARVEST LABOR SUPPLY IN ARIZONA IN 1942

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SUMMARY

1. While it is as yet too early to predict the probable volume of migratory labor that will be forthcoming from Oklahoma, Texas, and other States for cotton picking work in Arizona, the available information seems to indicate that:

   a. A surplus supply of labor will probably exist in certain sections of Oklahoma during the fall months of the year which may become available for work in the Arizona harvest.

   b. Although the return flow to Arizona of migrants who had previously picked cotton in this State will be less this year, it appears probable that new migrants will be available under reasonable inducements with respect to wage rates, transportation facilities, housing and the customary perquisites. This is also suggested by the relative ease with which sugar beet workers were recruited from Oklahoma this year.

   c. In view of a probable material increase in cotton picking wage rates this year over last year in Oklahoma and Texas, it appears likely that Arizona growers will have to make such wage adjustments as will enable them to compete effectively for the available labor supply.

   d. The indications provided so far this year by the Arizona and California border counts of migratory labor moving by automobiles in search of manual employment suggest no material change in this type of movement from that of last year. A larger proportion of these persons, however, may be seeking work in war industries other than agriculture.

   e. If labor is recruited in areas of Oklahoma and Texas, the recruitment should be handled in such a manner as to assure an orderly movement of labor and its proper distribution, and at the same time avoid possibly injurious effects to agricultural operations within the recruitment areas.

2. Approximately 40 percent of Arizona's total crop land under irrigation in 1942 is planted to cotton.

3. The acreage in cultivation July 1, 1942 of American-Egyptian cotton, a vital war commodity, was 126,000 acres or 26 percent greater than the 1941 acreage.

4. The total labor requirements for harvesting the 1942 Arizona cotton crop are estimated at 2,654,000 man days. Of this total, 2,531,000 man days will be required for picking and 123,000 man days for weighing and hauling cotton to the gin.

5. The estimated number of cotton pickers needed by months in Arizona is as follows:

July plus August	September	October	November	December	January	February
7,500	19,300	23,200	26,500	24,000	19,700	3,200

6. Although Arizona depends largely on out-of-state workers to harvest the cotton crop, data indicate that approximately 8,000 resident workers are available for picking cotton in 1942.

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Brief Summary of Arizona Cotton Economy

The relative importance of cotton in Arizona's agricultural economy is indicated by the fact that in 1941 approximately 35 percent of the total crop land under irrigation was planted to cotton and in 1942 almost 40 percent. Although cotton production in 1941 was the lowest since 1935, the gross cash income from cotton lint and seed amounted to a little more than one-fourth of the total gross cash income from farm and ranch production.

The great demand for American-Egyptian (long-staple) cotton during World War I led Arizona to expand her acreage to an all time high of almost 200,000 acres. The post war period was disastrous to the American-Egyptian cotton grower and the large acreage declined to 9,000 acres by 1924. During the period 1924 to 1941 the annual acreage and production fluctuated greatly. The year 1940, however, marks the beginning of an era of expansion. The acreage harvested in 1941 increased to 100,000 acres, while for 1942, it is estimated 126,000 acres will be harvested. (Table 1) Major factors responsible for the expanded acreage planted to American-Egyptian cotton are: (1) The belief that World War II would create greater demands for long-staple cotton by American mills and that supplies of Egyptian cotton might be blocked because of the lack of transportation facilities. (2) The development of new irrigated areas suitable for cotton production for which no allotments based on past history were available for short-staple cotton. (3) The belief that other cotton areas in the State were suitable for long-staple cotton production; and (4) The announcement that price supporting loans would be made on cotton 1 1/8 inches in length and longer, which removed some of the market hazards and tended to stabilize the production and supply of long-staple cotton.

Table 1. Acreage, yield per acre and production of long and short staple cotton, Arizona, 1937-1941

	Acres 1/		Yield per acre lint 2/		Production 3/	
	Long	Short	Long	Short	Long	Short
	1000 acres		Pounds		1000 bales	
1937	21	278	269	518	12	301
1938	44	159	234	525	21	175
1939	41	147	323	567	28	174
1940	65	155	225	508	31	164
1941	100	150	199	446	41	140
1942 4/	126	151	255	526	67	166

Source: Division of Agricultural Statistics, Bureau of Agricultural Economics, U. S. Department of Agriculture.

1/ Acres harvested. 2/ Per acre harvested. 3/ 500 lb. gross weight bales.
4/ Cotton estimate, August 1, 1942, Crop Reporting Board, U.S.D.A.

During recent years the acreage of upland (short-staple) cotton has remained relatively constant. (Table 1)

Although lettuce, vegetables, citrus, alfalfa and grain sorghums compete directly with cotton for labor during the cotton harvest, the total number of workers required for these other crops is relatively small compared to the number required for the cotton harvest. The cotton harvest labor peak in November is more than five times as great as the seasonal labor demand for all other crops during this month.

Arizona Cotton Harvest Labor Requirements

The estimates of seasonal labor requirements for the Arizona cotton harvest in 1942 were calculated from the following basic data: (1) Cotton acreage and yield estimate released by the Crop Reporting Board of the U. S. Department of Agriculture. (2) Productive output per man day for picking (based on the use of average pickers for upland and SIP cotton) and weighing and hauling cotton to the gin. (3) Need in man days for seasonal labor by months, based on anticipated crop maturity and the monthly ginning figures as reported by the Bureau of The Census for recent years; and (4) number of workers needed by months determined from the monthly totals of man days of labor required divided by the number of available work days in the given months.

Labor requirements presented here in terms of man days and in the number of workers assume average efficiency of utilization and average output per worker per day. Inadequate distribution and utilization of workers, weather, changes in cotton maturity and similar factors can easily and quickly cause an increase in labor requirements as the cotton harvest develops. On the other hand, adequate distribution and utilization of workers, good weather and a more even maturity of cotton would decrease the labor requirements of peak months and level off the demand for workers.

The 1942 cotton acreage in Arizona is estimated by the U. S. Department of Agriculture at 277,000 acres of which 126,000 acres is American-Egyptian or long-staple cotton. Yields per acre are estimated at 526 pounds of lint for upland and 255 pounds for American-Egyptian. (Table 1) Total labor requirements for the cotton harvest in Arizona for 1942 are somewhat higher than for 1941 because of an increase of 26 percent in American-Egyptian (long-staple) acreage. Moreover, past experience has proven that pickers by and large prefer to pick upland or short-staple cotton rather than American-Egyptian cotton even though the picking rate per hundred-weight for the latter has been almost double that of upland cotton. It is possible to pick from 60 to 100 percent more upland cotton per day with less physical exertion. Furthermore, upland cotton fields tend to have much more uniform yields over a field which is an important consideration from the standpoint of the picker. Another fact that makes for increased labor demand in 1942, is that timeliness is extremely important in picking American-Egyptian cotton. After the boll opens the cotton should be picked within a relatively short time, compared to upland cotton, as it begins to "string out" and fall to the ground. Severe winds and rains likely to occur at anytime during the harvest season may cause losses up to 75 percent. Upland cotton is not so affected.

The labor requirements for the Arizona 1942 cotton harvest are estimated at 2,654,000 man days. Table 2 indicates the number of workers needed by month for picking and weighing and hauling cotton to the gin. This season picking was reported to begin the last week in July for stubb (volunteer) cotton, because of favorable conditions. Picking during August will be limited almost entirely to picking stubb cotton. September marks the real beginning of the harvest season and of the demand for large numbers of workers. The peak demand for workers comes in October, November and December.

During November the high peak month, about 26,500 cotton pickers will be needed. (Table 2). Frost usually occurs during this month, cracking open bolls remaining on the stalk and putting an end to fruiting.

Usual Sources of Supply

(a) Within-state. - Although Arizona depends heavily on out-of-state sources for its supply of cotton pickers, a part of this supply is obtained from resident labor. Information furnished by Dr. E. D. Tetreau of the University of Arizona indicates that during November 1937, the month of maximum cotton picking employment, the number of cotton pickers at work in Arizona averaged between 27,000 and 28,000, of which 20,000 came from outside the State. Brown and Cassmore also estimated in their study 1/ an average employment for November 1937 of approximately 30,000 cotton pickers of which only 7 or 8 thousand are indicated to have been Arizona residents. These estimates of employment in cotton picking of resident labor appear to be rather conservative.

While there has been some loss of the resident farm population during the past eighteen months to the armed forces and to war time employment, it is doubtful whether the number of resident workers available for this year's cotton harvest will be materially different from the number available in 1937. Offsetting factors to the drain of draft and defense employment on the resident labor supply have been the increases in the resident farm labor force resulting from permanent settlement of migrants from such areas as Oklahoma and Texas, and the use of persons not ordinarily in the farm labor market. It is of interest to note, in this connection, that estimates of the U. S. Department of Agriculture place the total farm employment in Arizona on April 1, 1942 at 40,000 workers, consisting of 20,000 hired workers and 20,000 operators and unpaid family labor. 2/ Since relatively little influx of out-of-state farm workers occurs as early as April 1, the estimate of 40,000 workers on all farms in Arizona represents nearly the whole of the within-state working force on Arizona farms as of April 1, 1942. Assuming that only one-fifth of this number will be available for cotton picking, a resident supply of 8,000 cotton pickers this fall is suggested by these figures.

1/ Migratory Cotton Pickers in Arizona, by Malcolm Brown and Oren Cassmore, Works Progress Administration, 1939.
2/ Farm Labor Report, Bureau of Agricultural Economics, April 16, 1942

Table 2. Estimated labor requirements for Arizona cotton harvest, 1942

	Monthly distribution						
	July August	Sept.	October	November	December	January	February
Percentage ginned	5	16	22	23	19	14	1
Picking:							
Number of man days	126,500	405,000	556,800	582,100	480,[illegible]0	354,300	25,300
Number of workers	7,500	19,300	23,200	26,500	24,000	19,700	3,200
Weighing and hauling to gin:							
Number of man days	6,200	19,700	27,100	28,300	23,400	17,200	1,200
Number of workers	400	1,000	1,200	1,300	1,200	1,000	200
Total:							
Number of man days	132,700	424,700	583,900	610,400	504,300	371,500	26,500
Number of workers	7,900	20,300	24,400	27,800	25,200	20,700	3,400

(1) Out-of-state. - Normally, out-of-state workers make up between two-thirds and three-fourths of the total number of cotton pickers employed in the Arizona cotton harvest. In fact the same proportion of out-of-state workers will be needed for the 1942 Arizona cotton harvest, since the estimated labor requirements presented in table 2 minus the potential resident supply indicate that between 16 and 20,000 workers will be needed during the most active months of the season (October-December).

In previous years Oklahoma, Texas and Arkansas have supplied the majority of migrant cotton pickers. Adequate recent data are not available to indicate the number of such workers that have come in annually from the various States. The most recent studies relating to the migratory movement of cotton labor to Arizona indicate that between 20,000 and 22,000 out-of-state cotton pickers were employed in Arizona during November 1937. 1/ Data from the 1937 WPA study indicate by State of origin, that slightly more than one-half of the migrant cotton pickers came from Oklahoma; about one-sixth from Texas, while Arkansas and Missouri supplied about one-seventh of the total number of workers. Thus these four States supplied approximately 85 percent of out-of-state laborers used in picking cotton in Arizona during the 1937 season. The remaining 15 percent of the migrants came from many widely scattered States.

The Situation in Oklahoma

Several studies made in Oklahoma indicate the probability of a surplus labor supply during the fall of 1942 in addition to the current surplus of agricultural and unskilled workers which normally exists in some sections of the State. In a report recently prepared by R. T. McMillan, of the Oklahoma Agricultural Experiment Station, it is estimated that "during the fall months of 1942 there should be a large surplus of workers available for farm employment." This report also states:

> No general shortage in agricultural labor is expected in Oklahoma for the remainder of 1942 and during 1943. Assuming an increase of 8 percent in demand requirements and a decrease of 5 percent in supply from April 1, it is estimated that there will be an excess of 102,700 potential workers, or 37 percent, above the number needed by October 1, 1942. 2/

It should be noted, however, that these estimates of a surplus labor supply in Oklahoma presuppose an extensive use in farm work of farm women, children and both farm and non-farm youths -- groups of people who are not sufficiently mobile to be readily available for work in other States. Consequently, only a part of the estimated surplus can be considered as potential migratory laborers.

The existence of a surplus labor supply potentially available for out-of-state farm work this fall is also suggested by the United States Employment Service's

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1/ Migratory Cotton Pickers in Arizona, by J. Brown and O. Cassmore, op. cit. Arizona's Farm Laborers, by E. D. Tetreau, University of Arizona, 1939.
2/ Farm Labor as a Factor Affecting Agricultural Production in 1942 and 1943.

active file registry of agricultural and unskilled workers for Oklahoma as of the middle of April of this year. There were on that date approximately 14,000 agricultural and unskilled workers registered for employment with the United States Employment Service who were potentially available for job referrals. 1/ It is roughly estimated that by October of this year the number of agricultural and unskilled workers on the active files of the Employment Service may be about 15,000 after allowing for the usual increase in hired farm workers between April and October, and after consideration of probable changes in the demand for common labor in non-agricultural occupations.

General information indicating the existence of a surplus labor supply at the present time in selected areas of Oklahoma was obtained in a recent survey of five counties, made by the Department of Agriculture, in cooperation with the Oklahoma Agricultural Experiment Station. 2/ Preliminary tabulations from this study indicate substantial labor surpluses in the counties of Okmulgee (particularly of Negro labor), LeFlore (particularly the southern and western sections of the county), and Carter County. A part of the present surplus labor supply in these counties is due to the poor yields of grains and other crops. The condition of the cotton crop in these counties is not very favorable.

In order to throw more light on the potential supply of cotton picking labor that may be available or forthcoming from areas which have been important sources of migratory labor for Arizona in the past, a brief reconnaissance survey was made by the Department of Agriculture. A number of counties in Oklahoma and Texas were visited and information was sought as to the local labor supply and employment situation in general, and especially the prospects for labor coming to Arizona for cotton picking work this season. This survey was made in the last week of June and the first week of July. It was felt, that the availability of such information at this time, even though of a general nature, would facilitate more effective planning for labor utilization in the cotton harvest in Arizona.

Information secured in the sample counties of Oklahoma from county agents, United States Employment Service officials and officials of the Farm Security Administration, as well as information obtained from townspeople, farmers and farm laborers, indicate that although the farm labor supply has been materially reduced by war time employment and the armed forces, a surplus of labor exists, as well as considerable underemployment, in certain areas of the State.

In general, this situation prevails over portions of the eastern and southeastern half of Oklahoma in which there are relatively few defense projects and in which poor crop conditions on the many small and marginal farms provide inadequate employment opportunities for the resident labor supply. The information gathered in this survey and in the one made cooperatively with the Oklahoma Agricultural Experiment Station suggests that this is the situation

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1/Unskilled workers registered with the Employment Service in Oklahoma are very largely of an agricultural background, so that this group plus the category of "agricultural workers" may be considered as potentially available for farm employment.
2/Preliminary Report on Oklahoma Surplus Labor Survey by W. Logan and [illegible], June 1942.

in varying degrees in such counties as Okmulgee, LeFlore, Carter, Choctaw, McCurtain, and possibly Love, Marshall, Johnston and Caddo. It is from these areas that a considerable proportion of last year's migratory cotton pickers for Arizona came. It is also in the southeastern counties that the survey showed evidence of the availability of persons who had never been to Arizona for possible migration this year under suitable wage rates, facilities for transportation and the customary perquisites.

Studies of migration in other years indicate that normally the composition of the body of migrant cotton pickers is not the same each year, but is largely made up of a group of new migrants moving westward from the Western Cotton States. 1/ Since many of the former migrants are now employed in war industries or have been taken into the armed forces the volume of migration this season from Oklahoma to Arizona for the cotton harvest will depend to a larger than usual extent on the number of new migrants who come in of their own volition or who are induced to come in.

The Situation in Texas

In recent years, Texas has provided relatively few cotton pickers to Arizona and New Mexico. However, a part of the migrants from Texas and other States who pick cotton in the Texas low and high plains areas each year normally move from Texas into New Mexico and Arizona. In the past, the movement of this labor has taken place without intensive recruitment. For several years including 1941, the U. S. Employment Service office of Texas has refused to make referrals to Arizona, but in each of these years the Arizona Employment Service office, before the completion of the cotton harvest, has requested Texas officials to stop the flow of migrants to Arizona.

Available information indicates that the farm labor supply in Texas, as in other areas, has been materially reduced as a result of movement into war time employment and the armed forces. In addition it was reported the sugar beet companies, who normally recruit about 40,000 workers annually in Texas for work in other States, intensified their recruitment program this season and moved out about 20,000 extra workers.

The normal movement of cotton pickers from Texas into Arizona may be curtailed, however, by the improved employment and wage conditions in Texas areas. The extent of this curtailment will depend primarily on wage differentials between Arizona cotton picking rates and those paid in Texas areas, particularly in the High and low plains.

Opinions expressed by agency officials and others shortly before the opening of the cotton picking season in Texas suggest the possibility that picking rates for short-staple varieties may start at $1.00 per cwt. in the lower valley, $1.50 in the Corpus Christi and Coastal Bend areas, and may possibly reach $1.75 in the Blacklands. Cotton snapping rates in the high and low plains areas of Texas of $1.00 to $1.25 per cwt. (equivalent to picking rates of about $2.00 to $2.50 per cwt.) were also viewed as probable. These wage rate possibilities for Texas this season should be viewed, however, as merely expressions of opinion since the cotton season had at that time not yet begun.

1/ See for example, "Migratory Cotton Pickers in Arizona," op.cit., pp.22,24,[illegible]

Conditions Governing Availability of Out-of-State Laborers for Cotton Picking in Arizona

The volume of migration for cotton picking in Arizona this season from Oklahoma and Texas will depend largely on the available surpluses of agricultural and unskilled laborers in these States during the fall months. Important factors that will materially influence the availability of out-of-state laborers for cotton picking in Arizona are: (1) Wage rates for cotton picking in Arizona compared with wage rates in Oklahoma, Texas, and Arkansas; (2) the extent to which potential workers are immobilized due to transportation difficulties, and the measures taken to provide such facilities; (3) the extent to which migrants of previous years have been absorbed into more profitable employment or taken into the armed forces.

In the course of the reconnaissance survey of the potential movement of cotton picking labor from Oklahoma to Arizona an attempt was made to locate workers and families who had been in Arizona previously in order to find out their present employment status and their intentions with respect to this year's cotton harvest. An attempt was also made to find out from them the reasons for the course of action that they plan to follow insofar as they could determine now. A similar procedure was followed in an attempt to locate individuals or families who have not been in Arizona before, but whose employment and occupational status were such as to make them potentially available for migration into the cotton fields of other States.

The majority of the families interviewed were undecided about going to Arizona this season for the following reasons: 1. The lack of a car or funds for transportation. 2. The question whether cotton picking wage rates would be sufficiently high in Arizona, as compared with those likely to be paid in the home State, to justify the trip. 3. The question whether housing and the customary porquisites would be provided. 4. The prospects of finding farm or other employment at home. Concern over transportation appeared to be a more important reason for indecision among the potential migrants than among those who had been in Arizona before.

The major reason advanced by those not planning to go to Arizona this year was employment of the head of the family on a defense job, usually at common labor on a construction project paying from 40 to 55 cents an hour and time and a half for overtime over 40 hours.

While the persons interviewed who displayed interest in going to Arizona were unwilling to commit themselves as to the wage rates that might influence them, they generally stated that, in order to make the trip worth while, wage rates in Arizona would have to be reasonably higher than those paid in the home State. Rates anticipated in Oklahoma for this year varied from $1.25 per cwt. to $1.75 to $2.00 per cwt.

Other Indications of the 1942 Migratory Movement

The experience of the United States Employment Service in recruiting sugar beet workers, as well as the migratory movement observed through the Arizona-California border counts, is believed to provide some clues as to the migration prospects for this year's cotton harvest in Arizona.

Relatively little difficulty was experienced by the Employment Service last May and June in recruiting approximately 3000 white and negro workers from Oklahoma for the sugar beet fields of the western States. Very few of these workers had ever had any experience in sugar beet field work. The relative ease with which this labor was recruited was attributed by Employment Service officials to (1) the fact that recruiting was done during a generally slack season of farm work; (2) that wage rates paid for sugar beet work were relatively high; (3) that one-way transportation was provided without charge to the workers; and (4) that assurances were given for the furnishing of housing and other customary perquisites.

For several years past, the border checking stations in Arizona and California have maintained counts of persons entering and leaving these States by automobile and apparently in search or need of manual employment. Although these figures do not provide an actual count of agricultural workers moving across State lines, they have in the past proven to be of considerable significance in gauging the rate of flow of the type of population seeking or available for seasonal farm work.

Although the movement of persons into Arizona from the East during the period from January through July 1942, as indicated by the border count, was approximately 10 percent smaller than the relatively large movement during the same period of 1941, it was slightly larger than the movement recorded during the first seven months of 1940. The movement into Arizona from the opposite direction, namely, California, as indicated in the border count during the first seven months of 1942, was larger than during the same period of 1941. The total movement into Arizona from both East and West was therefore only slightly smaller than in 1941. A partly offsetting factor is the fact that departures of these persons from Arizona to California so far this year were fewer than a year ago, resulting in a ratio of arrivals to departures (through the western border) that is slightly higher than that of last year. 1/

In commenting on the significance of the Arizona-California border count insofar as it bears on the flow of migratory workers, a report of the Bureau of Agricultural Economics states:

1/ No count is maintained of departures from Arizona to the East.

The migration of persons in search of manual employment, characteristic of the past decade, is continuing. While so far it appears to be maintaining the same general level, despite conditions brought on by the war, the figures for the first half of 1942 show a slight diminution over the preceding year. A tendency toward concentration in the nearby States, some lessening of migration in recent months, and the tendency for the monthly fluctuation to be less marked suggests a change in the character of the migration (possibly a larger proportion seeking work in war industries). It is too early, however, to determine the full nature and effect of these changes.1/

1/ Persons in Parties in Need of Manual Employment Entering Arizona and California by motor Vehicle, January 1 to June 30, 1942, Report No. 10.